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Pearson correlation coefficient of the student perception and challenges towards open and distance learning during COVID-19

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ABSTRACT

COVID-19 pandemic has a huge change in worldwide education. Previous face to face method of learning have been change to open and distance learning. This study investigated students' perceptions and challenge of Open and Distance Learning (ODL) during COVID-19 in Institution of Higher Learning (IHL). Data were collected from 141 online students of IHL using Google Form. The independent sample t-test used to compare the mean of student perception and students challenges among socio-demographic. Meanwhile the Pearson correlation coefficient is also used to identify the relationship between the overall score of student perception and student challenges. As a result, the research revealed that there are significant moderate negative associations between students' perception and students challenge.

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1. Introduction

Coronavirus (COVID-19) pandemic has a drastic change in worldwide education. Students in IHL also affected by this environment. Students face a challenge in their study during COVID-19 outbreak. Due to this pandemic, previous study on face to face have to be turn to ODL. Urgent and unexpected method of learning have been apply almost all the world. Thus, this new platform of study give a big challenge to the students. However, this is the only way that the students can continue

their study so that they can complete their courses by the given duration. Thus this study is focus on student's perception and challenge during ODL in IHL.

Many IHL in the world evolved the landscape of studies from traditional or blended learning to ODL with many challenges especially the country that never experience with the online classes such as Malaysia. All country across the world are forced to rapidly change their teaching and learning process during this pandemic as mention by [1], Jordan are reverting all their learning materials into online materials, Italy under Erasmus+ mobility program provide an alternative learning process through e-learning, Indonesia and Malaysia also encouraging their learning institution and schools to provide online materials to all of their students. It shows that most of countries are implementing e-learning method. The main objective of this study is to determine the perception of the students through ODL. This study also aims to find the challenge that contribute on online learning specifically in IHL.

2. Literature Review

With the COVID-19 outbreak in Malaysia, the Malaysian government has decided to prohibit any face-to-face teaching process which involves students to gather around at a big group of number. As the result, all school and university are being temporary closed for the time being. It is a good move by the government while teachers and lecturers had to find an alternative ways to finish the syllabus of the subjects they are teaching which also includes all the assessment that needs to be done by students. According to [2], online learning refers to the type of teaching when the learner is at a distance from the tutor and both tutor and learners used some form of technology to access learning materials and to interact to each other.

There are six strategies suggested by [3] in order to provide a high impact online teaching which are making emergency preparation for unexpected problems, divide the teaching content into smaller units to help students focus, emphasizing the use of voice in teaching, working with teaching assistant and gain online support from them, strengthening student's learning active activity outside the class and combining offline and online self-learning effectively.

This support by [4] that also comes with almost the same strategies to fully utilize the e-learning but with the concepts of open education practice (OEP) and open education resources (OER). Our educations are slowly approaching to a new era since the pandemic outbreak which might be good for new generation. Examples of OER and OEP approaches according to [5] are recorded audio or video lectures, portable document format (PDF) or presentation file format (PPT) learning contents, e-books, educational games, online exercises and assessments and interactive tools.

Teaching and learning during the COVID-19 pandemic are very challenging especially the educator are not allowed to meet their students face-to-face for the whole semester. They might never see each other but the knowledge flow has to be there to make the teaching and learning successful. According to [5] in their research at Arab Region, the OER and OEP seems to be a failure because of some aspect which they identify it as challenges.

The challenge of ODL which include OER and OEP based on [5] such as, low government enforcement of these education line, copyrights problems, lack of motivation among educator and learners, and absence of OER tools. It also support by [6] in their paper on medical students, who also state that students are creating a positive and negative perceptive towards ODL because of all of this challenges especially the internet connection and the demographics problems. In addition, [7] on their paper identify the main problem among ODL students are the various strength internet connection and their time management.

There are lots of challenges as listed by [8], [9] and [10] such as the ability of learner to understand the educators teaching tools for ODL, different demographic background among students, the house environment, and also lack of awareness of ODL concept of learning from both educators and learners. As the conclusion, we can say that during COVID-19 pandemics, all education line in our country are forced to find alternative ways to make sure teaching and learning still continue even tough without face-to-face interaction. Educators and learners need to overcome all the challenges in order to create a positive perception towards the new education era.

3. Methodology

This research aims is to study IHL students perceptions and challenges towards ODL. The process began with dataset primarily collection among IHL students through a Google Form. Formula for two-sided test were used from prevalence knowledge, attitude and practice KAP with minimum sample size 141 students in various IHL and different background of study. The respondents are

conveniently participate in this study without pressure from any program and part [11]. Structure of questionnaire in this study divided into three parts as summarized in Table 1. First part of the questionnaire involves the respondent background, while second and third section includes 5 Likert scale direct questionnaire about respondent perception and their challenges.

Table 1. Structure of Questionnaire

Section	Variable
A	Student's Background
B	Student's Perceptions
C	Student's Challenges

Table 2 show the total scores for student's perceptions and challenge were classified into 3 levels (high level, moderate level or low level) based on Bloom's cut-off 60%- 80% point out of the total expected score for each part [12]. From the bloom's cut of point of 80% indicates that if the total student's perception scores between 28-35 then it indicates that the students has positive perception on learning through ODL. Otherwise if the total score is below than 20 then we can conclude that the students might have negative perception on this ODL. From the from the bloom's cut of point of 80% indicates that if the total student's challenge scores between 32-40 then it indicates that the students face many challenging on learning through ODL. Otherwise if the total score is below than 23 then we can conclude that the students might have less challenge learning through ODL. The higher total student's perception and challenge score obtained indicating more positive perception and challenge among students towards learning through ODL.

Table 2. Bloom's cut off point

Section	Low Level (Less than 59%)	Moderate Level (60- 79%)	High Level (80-100%)
Student's Perceptions	00 – 20	21 – 27	28 – 35
Student's Challenges	00 – 23	24 – 31	32 – 40

Figure 1 present a conceptual framework. There are five variables included in this study which are Gender, Placement, Age, Perception and Challenges. This study performed using IBM SPSS version 23.0 to evaluate the students perception and challenges towards ODL. Initially, demography data is presented graphically in terms of percentage [13,14] using descriptive analysis to describe the data into informative way. Then, it followed by reliability test to ensure all factors are acceptable and adequate for this study to enhance the accuracy of the evaluation [15]. The measurement of the internal consistency of a test or scale for the values Cronbach's Alpha more than 0.6 is consider reliable [16]. Next, independent sample t-test were used to comparing the mean of the students' perception and students challenges among demographic. We also used Pearson correlation in order to identify the relationship the of overall score between students' perception and student challenges towards ODL.

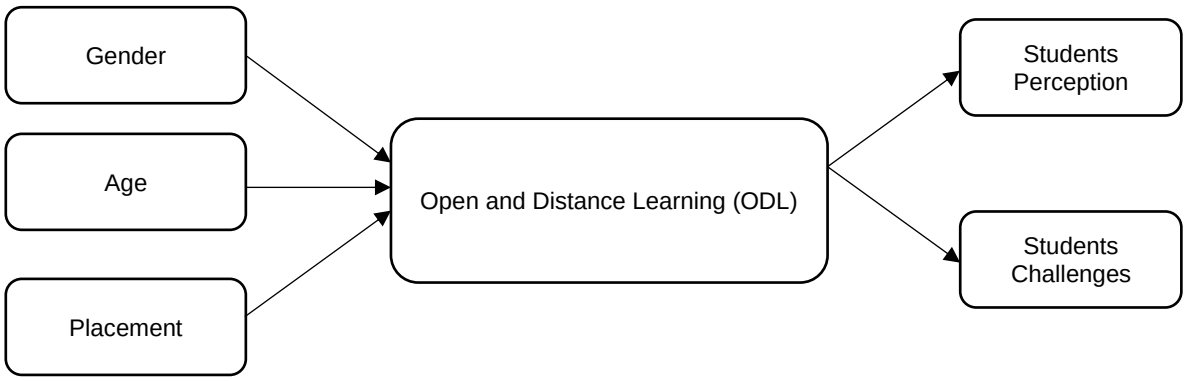

Figure 1. Conceptual Framework on Online Distance Learning

4. Results and Discussions

4.1 Descriptive Analysis on Respondent's Background

Table 3 show the summary of the personal characteristics of the respondents. The total of 141 respondents were participated in this study. The majority of the participants (70.9%) were female and half of the respondents (51.1%) in the age of 21-23 years old and from rural area (59.6%). Slightly more than half of the studied sample (70.9%) think that open and distance learning (ODL) should not be continued in the future.

Table 3. Sample Distribution Regarding Personal Characteristics, n=733

Parameter	n (%)
Gender	
Male	41 (29.1)
Female	100 (70.9)
Age	
18-20 years	69 (48.9)
21 – 23 years	72 (51.1)
Placement	
Rural	84 (59.6)
Urban	57 (40.4)
Source of knowledge	
No	100 (70.9)
Yes	41 (29.1)

4.2 Reliability Test

The Cronbach's alpha values represent in Table 4 used to evaluate the reliability of the questionnaire. Based on the results in Table 3, the Cronbach's alpha reliability test for the items in each construct is more than 0.8. Thus, the items used to measure students' perception and challenging survey on ODL during pandemic COVID-19 are therefore acceptable. This finding was in agreement with several previous studies indicates that the Cronbach Alpha value more than 0.6 is considered adequate and reliable [17].

Table 4. The Cronbach alpha for each score of the participants regarding COVID-19

Construct	Number of Questions	Cronbach's Alpha
Perception	7	0.861
Challenge	8	0.814

4.3 Results for statistical analysis

The results of the student's perception and challenging towards online distance learning during COVID-19 pandemic are presented in Table 5. The overall mean student's perception scores was 18.70 (SD: 6.02), corresponding to 53.4% (18.7/35*100) respond on this survey. The level of student's perception on ODL was less than 60% or considerably low. Meanwhile, for Students' challenge was 75.35% (30.14/40*100) (Mean: 30.14, SD: 6.00) and can considerably moderate challenge face among students during learning ODL based on Bloom's level.

Table 5. Overall scores of the participants regarding COVID-19

Construct	Number of Questions	Range of Score	Total score (mean ±SD)
Overall Perception	7	5-35	18.70 ± 6.02
Overall Challenge	8	5-40	30.14 ± 6.00

The consciousness about the students' perception on ODL was considerably low among the participants. The results supported that the percentage score for most of the item in the students' perception is less than 30% except the question of "IT performance has increased during online distance learning" with the score of 67.4% (See Table 6).

Table 6. Distribution of Studied Sample Regarding Perception towards Online Distance Learning during COVID-19 Outbreak

Item No.	Items description	SA & A	Not sure	SD & D
		n (%)	n (%)	n (%)
P1	I prefer open and distance learning more than face-to-face learning	27 (19.1)	33 (23.4)	81 (57.5)
P2	I feel more enthusiastic to do homework by open and distance learning rather than a face-to-face learning	28 (19.8)	42 (29.8)	71 (50.3)
P3	I feel stress when learning online at home	25 (17.7)	29 (20.6)	87 (71.7)
P4	I think open and distance learning give more disadvantages than face to face learning	22 (15.6)	51 (36.2)	68 (48.2)
P5	I believe that my my productivity has increased during open and distance learning	27 (19.1)	54 (35.5)	64 (45.5)
P6	Open and distance learning makes me more focus on doing my assignment	35 (24.8)	38 (27.0)	68 (48.2)
P7	I believe that my IT performance has increased during open and distance learning	81 (67.4)	43 (30.5)	17 (12.1)

Note: SA & A- Strongly agree and Agree, SD & D- Strongly disagree and Disagree

The results of the student challenge score are summarized in Table 7. The majority of participants facing difficulty in group assignment (73.8%), presentation is difficult to carry out (66.7%), House environment is not conducive (65.2%), difficulty in accessing to the tools (64.2%), Communication with lecturer (62.4%). There are also found that most of students having difficult to adapt with Online Distance Learning (58.8%), and Internet connectivity too slow (50.4%).

Table 7. Distribution of Studied Sample Regarding biggest challenge you face while Online Distance Learning

Item No.	Items description	SA & A	Not sure	SD & D
		n (%)	n (%)	n (%)
C1	Access to the tools/ equipment/ information that needed in doing the task	88 (64.2)	40 (28.4)	13 (9.2)
C2	Internet connectivity too slow	71 (50.4)	44 (31.2)	26 (8.5)
C3	Communication with lecturer	88 (62.4)	35 (24.8)	28 (12.7)
C4	Difficult to adapt with Online Distance Learning	83 (58.8)	34 (24.1)	24 (16.1)
C5	The facilities at home are incomplete	72 (51.1)	35 (24.8)	34 (24.1)
C6	House environment is not conducive	92 (65.2)	25 (17.7)	24 (17.1)
C7	Group discussion is difficult to carry out	104 (73.8)	23 (16.3)	14 (9.9)
C8	Presentation is difficult to carry out	94 (66.7)	28 (19.9)	19 (13.5)

Note: SA & A- Strongly agree and Agree, SD & D- Strongly disagree and Disagree

4.4 Analysis of students' perception and students' challenging scores with respect to demographic characteristics

The relation between socio-demographic characteristics and each score was demonstrated in Table 8. There is no difference perception and challenge score obtained between socio-demographic characteristics except locality. Those who live in urban areas (20.33±6.30) had a significantly higher mean score of student's perceptions compared to rural areas residents (17.58±5.60) (P = 0.009).

Table 8. Relation between demographic and each scores

	Perception scores		Challenge scores	
Characteristics	Mean ± SD	P-value	Mean ± SD	P-value
Gender				
Female	18.99 ± 6.34 [a]	0.326 [a]	29.94 ± 6.18 [a]	0.518 [a]
Male	17.98 ± 5.18 [a]		30.63 ± 5.58 [a]	
Age Group				
18-20 years	18.59 ± 5.77 [a]	0.846	30.14 ± 5.53 [a]	0.995 [a]
21-23 years	18.79 ± 6.29 [a]		30.14 ± 6.45 [a]	
Locality				
Urban	20.33 ± 6.30 [a]	0.009* [a]	29.30 ± 5.97 [a]	0.170 [a]
Rural	17.58 ± 5.60 [a]		30.71 ± 6.00 [a]	
Perception score	1		-0.518	0.000* [r]

[a]: independent sample t-test
[r]: Pearson correlation coefficient
*: Significant at 0.01

In term of correlation, it also found that there are significant moderate negative associations between perception and challenge (r = - 0.518, P = 0.000), which means that students' perception on ODL is negative because of too many challenge they face during ODL.

4.5 Discussion

These findings show that students' perceptions of ODL are low at low levels. These low scores indicate that students' negative perceptions of the learning process through ODL. It should be noted that the lack of students' perceptions about learning ODL is because they find it challenging to

communicate in completing all assigned tasks. However, it can be seen that this negative perception is also very closely related to the challenges faced by students during ODL where more challenges faced lead to negative perception by students concerning learning through ODL.

5. Conclusion

In summary, our findings have shown that the level of IHL students' perception on ODL during COVID-19 still need to be improved. However, this study also shown that university and lecturers should take more effort to encourage the online learning so that they will felt enjoy and fun.

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